67. The method of claim **39**, wherein at least one of disposing the first encapsulating layer and disposing the second encapsulating layer comprises disposing a material in a vapor phase.

68. The method of claim **39**, further comprising:

depositing a metallic interconnection layer on the first encapsulating layer, and

coupling the second set of components directly on the metallic interconnection layer.

69. The method of claim **39**, further comprising:

depositing a metallic interconnection layer on the first encapsulation layer,

depositing a dielectric layer over the metallic interconnection layer, and

coupling the second set of components directly on the dielectric layer.

70. The method of claim **39**, wherein functionally interconnecting at least one of the first set of components with at least one of the second set of components comprises electrically interconnecting at least one of the first set of components with at least one of the second set of components.

71. The method of claim **70**, wherein electrically interconnecting at least one of the first set of components with at least one of the second set of components comprises:

disposing a via within the first encapsulating layer from an upper surface of the first encapsulating layer to an upper surface of the at least one of the first set of components, and

metallizing the via.

72. The method of claim **39**, further comprising disposing a microfluidic channel within at least one of the first encapsulating layer and the second encapsulating layer.

73. The method of claim **72** further comprising:

allowing the microfluidic channel to be filled with a thermally conductive material, and

drawing, by the thermally conductive material, heat away from at least one component of the first set of components and the second set of components.

74. The method of claim **72**, further comprising coupling the microfluidic channel in fluid communication with a sensor and an external fluid sample, and allowing the fluid sample to flow through the microfluidic channel to the sensor.

75. A device, comprising:

a first device, including

a first set of components at least partially encapsulated in a first encapsulating layer,

a first set of interconnects on at least two sides of the first device,

a second device, bonded to the first device, including

a second set of components at least partially encapsulated in a second encapsulating layer,

a second set of interconnects on at least two sides of the second device,

at least one functional interconnect for interconnecting at least one of the second set of components of the second device to at least one of the first set of components of the first device, such that the functional interconnect does not pass through a substrate.

* * * * *